Figure 1

Clone S1+27 protein sequence (SEQ ID No. 1)

```
  1 KSSPLLIRMEESLNIVKYTAFLYNDQLIWSGLEQDDMRILYKYLTTSLFP 50
 51 RHIEPELAGRDSPIRAEMPGNLQHYGRFLTGPLNLNDPDAKCRFPKIFVN 100
101 TDDTYEELHLIVYKAMSAAVCFMIDASVHPTLDFCRRLDSIVGPQLTVLA 150
151 SDICEQFNINKRMSGSEKEPQFKFIYFNHMNLAEKSTVHMRKTPSVSLTS 200
201 VHPDLMKILGDINSDFTRVDEDEEIIVKAMSDYWVVGKKSDRRELYVILN 250
251 QKNANLIEVNEVKKLCATQFNNIFFLD 277
```

Figure 2

Clone S1+28 protein sequence (SEQ ID No. 2)

```
  1 FAVDAKALPQNKPRPLTQEEIAQRRERARQRHAEKLAAAQGQAPLEPTQD 50
 51 GSAIETCPKGDEPRGDEQQVESMTPKPVLQEENNQESFIAFARVFSGVAR 100
101 RGKKIFVLGPKYSPLEFLRRVPLCFSAPPDGLPQVPHMAYCALENLYLLM 150
151 GRELEYLEEVPPGNVLGIGGLQDFVLKSATLCSLPSCPPFIPLNFEATPI 200
201 VRVAVEPKHPSEMPQLVKGMKLLNQADPCVQILIQETGEHVLVTAGEVHL 250
251 QRCLDDLKERFAKIHISVSEPIIPFRETITKPPKVDMVNEEIGKQQKVAV 300
301 IHQMKEDQSKIPEGIQVDSDGLITITTPNKLATLSVRAMPLPEEVTQILE 350
351 ENSDLIRSMEQLTSSLNEGENTHMIHQKTQEKIWEFKGKLEQHLTGRRWR 400
401 NIVDQIWSFGPRKCGPNILVNKSEDFQNSVWTGPADKASKEASRYRDLGN 450
451 SIVSGFQLATLSGPMCEEPLMGVCFVLEKWDLSKFEEQGASDLAKEDRRK 500
501 MKPVLVEMKTKSYKMAALRPLRRGHHRKENLHSLTAMDLSQDS 543
```

Figure 3

Clone S1+19 protein sequence (SEQ ID No. 3)

```
  1 MKAVKSERERGSRRRHRDGDVVLPAGVVVKQERLSPEVAPPAHRRPDHSG 50
 51 GSPSPPTSEPARSGHRGNRARGVSRSPPKKKNKASGRRSKSPRSKRNRSP 100
101 HHSTVKVKQEREDHPRRGREDRQHREPSEQEHRRARNSDRDRHRGHSHQR 150
151 RTSNERPGSGQGQGRDRDTQNLQAQEEEREFYNARRREHRQRNDVGGGGS 200
201 ESQELVPRPGGNNKEKEVPAKEKPSFELSGALLEDTNTFRGVVIKYSEPP 250
251 EARIPKKRWRLYPFKNDEVLPVMYIHRQSAYLLGRHRRIADIPIDHPSCS 300
301 KQHAVFQYRLVEYTRADGTVGRRVKPYIIDLGSGNGTFLNNKRIEPQRYY 350
351 ELKEKDVLKFGFSSREYVLLHESSDTSEIDRKDDEDEEEEEEVSDS 396
```

Figure 4

Protein sequence of NIPP-1 domain (SEQ ID No. 4) homologous to SNIP 1.

1 YLFGRNPDLCDFTIDHQSCSRVHAALVYHKHLKRVFLIDLNSTHGTFLGH 50

51 IRLEPHKPQQIPIDSTVSFGASTRAYTLREKP 82

Figure 5

Clone S1+19 Smad binding domain protein sequence (SEQ ID No. 5)

1 RHRGHSHQRRTSNERPGSGQGQGRDRDTQNLQAQEEEREFYNARRREHRQ 50

51 RNDVGGGGSESQELVPRPGGNNKEKEVPAKEKPSFELSGALLEDTNTFRG 100

101 VVIKYSEPPEARIPKKRWRLYPFKNDEVLPVMYIHRQSAYLLGRHRRIAD 150

151 IPIDHPSCSKQHAVFQYRLVEYTRADGTVGRRVKPYIIDLGSGNGTFLNN 200

201 KRIEPQRYYELKEKDVLKFGFSSREYVLLHESSDTSEIDRKDDEDEEEEE 250

251 EVSDS 255

Figure 6

Clone S1+19 C. elegans homology protein sequence

(SEQ ID No. 6)

1 GALTEDTNTFRGVVIKYNEPPEAKKPNARWRLYPFKGEESLQVLYIHRQS 50

51 AYLIGRDHKIADIPVDHPSCSKQHAVLQFRSMPFTRDDGTKARRIMPYII 100

101 DLGSGNGTFLNEKKIEPQRYIELQEKDMLKFGFSTREYVVMKEREITEEE 150

151 LAEGEDVKKEESD 163

Figure 7

Clone S1+12 protein sequence (SEQ ID No. 7)

1 EFGTRRMMEGLDDGPDFLSEEDRGLKAINVDLQSDAALQVDISDALSERD 50

51 KVKFTVHTKSSLPNFKQNEFSVVRQHEEFIWLHDSFVENEDYAGYIIPPA 100

101 PPRPDFDASREKLQKLGEGEGSMTKEEFTKMKQELEAEYLAIFKKTVAMH 150

151 EVFLCRVAAHPILRRDLNFHVFLEYNQDLSVRGKKKKKNSRSFGLLRQ 198

Figure 8

Clone S1+12-2 protein sequence (SEQ ID No.8)

```
  1  HASGLGAAMMEGLDDGPDFLSEEDRGLKAINVDLQSDAALQVDISDALSE 50
 51  RDKVKFTVHTKSSLPNFKQNEFSVVRQHEEFIWLHDSFVENEDYAGYIIP 100
101  PAPPRPDFDASREKLQKLGEGEGSMTKEEFTKMKQELEAEYLAIFKKTVA 150
151  MHEVFLCRVAAHPILRRDLNFHVFLEYNQDLSVRGKNKKEKLEDFFKNMV 200
201  KSADGVIVSGVKDVDDFFEHERTFLLEYHNRVKDASAKSDRMTRSHKSAA 250
251  DDYNRIGSSLYALGTQDSTDICKFFLKVSELFDKTRKIEARVSADEDLKL 300
301  SDLLKYYLRESQAAKDLLYRRSRSLVDYENANKALDKARAKNKDVLQAET 350
351  SQQLCCQKFEKISESAKQELIDFKTRRVAAFRKNLVELAELELKHAKGNL 400
401  QLLQNCLAVLNGDT 414
```

Figure 9

Clone S1+12-5 protein sequence (SEQ ID No.9)

```
  1 MTTLTEIKLLPSLVLLVCCEYLAIFKKTVAMHEVFLCRVAAHPILRRDLN 50
 51 FHVFLEYNQDLSVRGKNKKEKLEDFFKNMVKSADGVIVSGVKDVDDFFEH 100
101 ERTFLLEYHNRVKDASAKSDRMTRSHKSAADDYNRIGSSLYALGTQDSTD 150
151 ICKFFLKVSELFDKTRKIEARVSADEDLKLSDLLKYYLRESQAAKDLLYR 200
201 RSRSLVDYENANKALDKARAKNKDVLQAETSQQLCCQKFEKISESAKQEL 250
251 IDFKTRRVAAFRKNLVELAELELKHAKGNLQLLQNCLAVLNGDT 294
```

Figure 10

Clone S3+1 DNA sequence (SEQ ID No. 10)

1 ATGTCAAGTGGAATTTGGCAGAGAGGCAAAGAAGAAGAAGGAGTTTATGG 50

51 TTTTCTAATAGAAGATATCAGGAAGGAAGTGAATAGAGCTTCTAAACTGA 100

101 AATGCTGTGTTTGCAAGAAAAAATGGTGCTTCAATTGGATGTGTTGCACCC 150

151 CGATGTAAACGAAGTTATCATTTCCCATGTGGACTTCAGAGAGAATGTAT 200

201 TTTCCAGTTTACTGGCAATTTTGCGTCATTTTGTTGGGACCATCGACCTG 250

251 TTCAAATAATTACATCTAATAATTATAGAGAGTCCTTACCATGCACCATT 300

301 TGCTTGGAATTTATTGAGCCTATTCCAAGTTATAACATATTACGAAGTCC 350

351 TTGTTGTAAGAACGCTTGGTTTCATAGAGACTGTTTACAGGTTCAAGCAA 400

401 TAAATGCGGGAGTGTTTTTCTTTAGGTGTACAATATGCAATAATAGTGAC 450

451 ATCTTTCAGAAAGAGATGTTGAGAATGGGAATTCATATTCCTGAAAAAGA 500

501 TGCTTCCTGGGAATTAGAGGAAAACGCTTATCAAGAGCTTCTGCAGCACT 550

551 ATGAGCGTTGTGATGTTCGAAGATGTCGTTGCAAAGAAGGGCGAGACTAT 600

601 AATGCACCTGATAGCAAATGGGAAATAAAGCGCTGTCAGTGTTGTGGTTC 650

651 CAGTGGCACACATTTAGCCTGCTCCTCATTACGGTCATGGGAGCAAAATT 700

701 GGGAGTGTTTGGAATGTAGGGGTATTATCTACAATTCAGGAGAGTTCCAA 750

751 ACAGCCAAAAAACATGTATTACCCAATTCTAATAATGTGGGGATTACAGA 800

801 TTGTTTGTTGGAAGAGTCATCACCTAAATTACCCAGACAGTCACCTGGAT 850

851 CCCAGAGTAAAGATCTACTGAGGCAAGGCAGCAAATTTAGAAGAAATGTA 900

901 TCAACACTATTAATAGAGTTAGGATTCCAAATTAAAAAAAAAAAAAAAAA 950

951 ACTCGAGAAGNTTGGANTNTTCGCCAGAGGTTTGGTCAA 989

Figure 11
Clone S3+1 protein sequence (SEQ ID No. 11)

```
  1 MSSGIWQRGKEEEGVYGFLIEDIRKEVNRASKLKCCVCKKNGASIGCVAP 50

 51 RCKRSYHFPCGLQRECIFQFTGNFASFCWDHRPVQIITSNNYRESLPCTI 100

101 CLEFIEPIPSYNILRSPCCKNAWFHRDCLQVQAINAGVFFFRCTICNNSD 150

151 IFQKEMLRMGIHIPEKDASWELEENAYQELLQHYERCDVRRCRCKEGRDY 200

201 NAPDSKWEIKRCQCCGSSGTHLACSSLRSWEQNWECLECRGIIYNSGEFQ 250

251 TAKKHVLPNSNNVGITDCLLEESSPKLPRQSPGSQSKDLLRQGSKFRRNV 300

301 STLLIELGFQIKKKKKKLEKXGXFARGLV 329
```

Figure 12

Clone S3+12 DNA sequence (SEQ ID No. 12)

```
   1 AGGAAAGCTACAGAAATTAGCACTGCAGTGGTTCAGAGGTCAGCTACCAT 50
  51 TGGCAGTTCTCCAGTTCTCTATAGCCAGTCAGCTATAGCTACAGGTCACC 100
 101 AGGCAGCAGGGATTGGAAACCAGGCAACAGGAATTGGACATCAGACAATA 150
 151 CCAGTTAGCCTTCCAGCAGCAGGAATGGGTCATCAGGCCAGAGGAATGAG 200
 201 CCTGCAGTCAAATTACCTTGGACTAGCGGCAGCACCTGCAATTATGAGTT 250
 251 ATGCAGAATGTTCTGTCCCAATTGGAGTGACTGCTCCCTCATTGCAGCCA 300
 301 GTTCAGGCCCGAGGTGCTGTGCCTACCGCTACCATTATAGAACCACCACC 350
 351 ACCACCTCCTCCTCCTCCTCCTCCACCACCACCAGCTCCCAAAATGCCAC 400
 401 CACCTGAAAAGACAAAAAAAGGAAGGAAAGACAAGGCAAAGAAGAGTAAG 450
 451 ACCAAAATGCCATCTTTGGTAAAAAAGTGGCAGAGTATCCAGCGTGAGTT 500
 501 AGATGAAGAGGACAATTCTAGTTCCAGTGAAGAGGATCGGGAATCAACTG 550
 551 CACAGAAGCGAATTGAAGAGTGGAAACAGCAGCAGCTGGTTAGTGGCATG 600
 601 GCAGAGAGAAATGCTAATTTTGAAGCCCTTCCTGAGGATTGGAGAGCAAG 650
 651 GCTGAAGAGAAGGAAAATGGCTCCAAACACATAGTTTTTAAGTTTTTAAA 700
 701 ACTTTTTTGTATTATTGTTTGTTTTGTGTTCAGTTCAAAGTCTTAACCAG 750
 751 TTTTATTGTCAAATAAACTATAAATGTTATGGGGGAGATCTTATAAATTT 800
 801 CCTGGGCAAGAGTGTATGCATACAAAGTTTTCACTTTTGTGAAATGTAAT 850
 851 TTTTCTGTTTTTGCAAAGGGATGAGGTGATTGGAATTGCTTTGACCATGC 900
 901 TGCCTTTATTCTCAAACTGGCAAACTTAGCATGTTAGGTGTATTAACCTC 950
 951 ATCAGTCTTGAAGAACATGTGGCTCATGAGTATAACACTTCTGTAGAGGA 1000
1001 CTCCCTGACAAAAGTGAAGAATTAACTTCTCCTCCAGAACAAGTGCAATT 1050
1051 CAGAAGGCAGCTCTGCATTCTACCTTGCTTGACTGGAATTGTCTGAAGCT 1100
1101 TTTTCTGGCCTCTTTTCTCTAGTCGGCCACCCCTGAAGTGCTGAGGTCTA 1150
1151 AGTGGTTTACCTCGTGCTGATAGATGGCCACACTCTTTAGAGTAGTTCTC 1200
1201 ATAAGTTCTAGAACTGGTAGCTCGGTCGTTTCGCACACTAGGTGGCATAC 1250
1251 AGGCAGCAGCAGGTGTTCATATCCTTGATTTTGAGAATTTCCCCTCAAGT 1300
1301 ATGTGGCAGTAAATACAACAAGACACTCTATGTATTAATGTCTCCATTGT 1350
1351 CTTAACCCTGTTCCAAAACAAAATTCACCTCCTTTCTTTATGTGAATGTA 1400
1401 TTCTCCATAAAATTCCAGTATTTAAAAAGCAGTTTACTGTTCTGTACTTT 1450
1451 CTGTTGTATCACAATCAGGTAAAAGTCACTTTAAACTGAGGAAACGGCAA 1500
1501 ATTGTGTTTTAAAGCTCTTTGTATTTCTCCAGTTTCTGACCTTGTAAATT 1550
1551 TGTATATATGCACTAATAAAGCTTTTTTTATAATCCTGAAAAAAAAAAAA 1600
1601 AAAAAAAAAAAAAACTCGAGAAGCTTTGGACTTCTTCGCCAGAGGTTTGG 1650
1651 TCAAGTCTCCAATCAAGGTTGTC 1673
```

Figure 13

Clone S3+12 protein sequence (SEQ ID No. 13)

1 EFGTRRRKATEISTAVVQRSATIGSSPVLYSQSAIATGHQAAGIGNQATG 50

51 IGHQTIPVSLPAAGMGHQARGMSLQSNYLGLAAAPAIMSYAECSVPIGVT 100

101 APSLQPVQARGAVPTATIIEPPPPPPPPPPPPPPAPKMPPPEKTKKGRKD 150

151 KAKKSKTKMPSLVKKWQSIQRELDEEDNSSSSEEDRESTAQKRIEEWKQQ 200

201 QLVSGMAERNANFEALPEDWRARLKRRKMAPNT 233

Figure 14

Clone S3+103 DNA sequence (SEQ ID No. 14)

```
  1 GAATTCGGCACGAGGCGGACGTCATTGAGCTGCGACCCTTGTTCAACGCC 50
 51 GTTGGGCAAGCCAGCTGCTGGAGGTGCCGAGAATCTGAGTTTCGGCAAGC 100
101 AGCCAGGTCTGGAAACTAATATTTTAAAAATGACTACACCAAACAAGACA 150
151 CCTCCTGGTGCTGACCCCAAGCAGTTGGAAAGGACTGGAACAGTACGGGA 200
201 AATTGGGTCACAAGCTGTTTGGTCACTCTCATCTTGCAAACCAGGATTTG 250
251 GAGTGGATCAGTTACGAGATGACAATCTAGAAACTTATTGGCAATCAGAT 300
301 GGTTCCCAGCCTCATTTAGTGAACATCCAATTCAGAAGAAAAACAACAGT 350
351 GAAGACATTATGTATTTATGCAGACTACAAATCTGATGAAAGCTATACTC 400
401 CAAGCAAGATCTCAGTCAGAGTAGGAAATAATTTTCACAACCTTCAAGAA 450
451 ATTCGGCAACTTGAGTTGGTGGAACCAAGTGGCTGGATTCATGTTCCCTT 500
501 AACTGACAATCATAAGAAGCCAACTCGTACATTCATGATACAGATTGCTG 550
551 TTCTAGCCAATCACCAGAATGGAAGAGACACCCATATGAGACAAATTAAA 600
601 ATATACACACCAGTAGAAGAGAGCTCCATTGGTAAATTTCCTAGATGTAC 650
651 AACTATAGATTTCATGATGTATCGTTCAATAAGGTGACTTTAAAATGAGA 700
701 CGAAAATCATTAAACGTATCTTTGTTCTTATCCTGTATTTAAATAATATA 750
751 TCATGTACCTTTATTGAACAAGGCATCCGTTATATCTAATTTTGTATATG 800
801 TTTAAAAATATTTTATTGTAACTTTGACAAATAAATTTGGGGTCATATTA 850
851 TCTTTATTTTCTTTAACATGTAATAAAGCTCACATATTTTACATTAAAAA 900
901 AAAAAAAAAAAAAAAAACTCGAGAAG 926
```

Figure 15

Clone S3+103 protein sequence (SEQ ID No. 15)

```
  1 EFGTRRTSLSCDPCSTPLGKPAAGGAENLSFGKQPGLETNILKMTTPNKT 50
 51 PPGADPKQLERTGTVREIGSQAVWSLSSCKPGFGVDQLRDDNLETYWQSD 100
101 GSQPHLVNIQFRRKTTVKTLCIYADYKSDESYTPSKISVRVGNNFHNLQE 150
151 IRQLELVEPSGWIHVPLTDNHKKPTRTFMIQIAVLANHQNGRDTHMRQIK 200
201 IYTPVEESSIGKFPRCTTIDFMMYRSIR*L*NETKIIKRIFVLILYLNNI 250
251 SCTFIEQGIRYI*FCICLKIFYCNFDK*IWGHIIFIFFNM**SSHILH*K 300
301 KKKKKNSR 308
```

Figure 16

Clone S3+125 DNA sequence (SEQ ID No. 16)

```
   1 CAGGAATCTGTCCGAAGATAATTGAGGCAGAAGAGTCCAGAATGGGCCTC 50
  51 ATCATCGTCAATGCCTGGTACGGGAACTTTGTCAATGACAAGAGCAGGAA 100
 101 GAGCGAGAAGGTGAAGGTGATTGACGTGACTGTGCCCTGCAGTGCCTGGG 150
 151 TAAGGACTCGAAGCTCATCCTCACGAGGCCTCCAAGCTGGGCTGCCTGGC 200
 201 TTTTATGACCCGTGTGTGGGGGAAGAGAAGAACCTGAAAGTGCTCTATCA 250
 251 GTTCCGGGGCGTCCTGCATCAGGTGATGGTGCTGGACAGTGAGGCCCTCC 300
 301 GGATACCAAAGCAGTCCCACAGGATCGATACAGATGGATAAACTGCCAAG 350
 351 AACCAGATTTTTAAAAGGCCGCAAAAAATCTTTTCCTGGGAGTCTACAAA 400
 401 TTTGGAAATGAAAAAACCCAGACATCAGATGTTTTTATTTTATATTATTA 450
 451 TTATAGAAGGTGGTACCATTATCAATTATGTGAAGGGACATGCAGACACC 500
 501 CCAGCACTGGTATCTGAGTAACGGCTAAGAACCTCCTTCCTCTGGTTTTG 550
 551 AAAAGCAGTTCGGGTTGTCCAATTCTGTAACATTCATCTCCATTTTTTAA 600
 601 AAAGGTTTCTCTGACGGCCCCACGGCCCGAGCCGCGGTGAGCGTCGTGTT 650
 651 GCATGAGCCTGGGCCCCGGGCTTCCCGTGCGCCTCTGCCGCAGGTGCTTC 700
 701 TGGGCACCCATCCTCTGCGTTTCATTTGCAGTCGACTGTACAGAAGGCAC 750
 751 TCACCACAATAAACCTTTCCTGAAAGCAAAAAAAAAAAAAAAAAAACTCG 800
 801 AGAAGGTTTGGACTTGTTCGCCAGAGGTTTGGTCAAGTNTCCAA 844
```

Figure 17

Clone S3+125 protein sequence (SEQ ID No. 17)

1 IRHEAAGICPKIIEAEESRMGLIIVNAWYGNFVNDKSRKSEKVKVIDVTV 50

51 PCSAWVRTRSSSSRGLQAGLPGFYDPCVGEEKNLKVLYQFRGVLHQVMVL 100

101 DSEALRIPKQSHRIDTDG 118

Figure 18

Clone S1+30 DNA sequence (SEQ ID No. 18)

```
   1 GAATTCGGCACGAGGCGGACAAAGGGAATCAAAGTTGTGGGAAAATGGAA 50

  51 GGAAGTGAAGATTGACCCAAATATGTTTGCAGATGGACAGATGGATGACT 100

 101 TGGTGTGCTTTGAGGAATTGACAGATTACCAGTTGGTCTCCCCTGCCAAG 150

 151 AATTCCCTCCAGCTCTCTTCTCAAAGGAAGCACCCAAGAGAAAGGCACAA 200

 201 GCTGTTTCAGAAGAAG 216
```

Figure 19

Clone S1+30 protein sequence (SEQ ID No. 19)

1 EFGTRRTKGIKVVGKWKEVKIDPNMFADGQMDDLVCFEELTDYQLVSPAK 50

51 NSLQLSSQRKHPRERHKLFQKK 72

Figure 20

Clone S3+14 5' DNA sequence (SEQ ID No. 20)

```
   1 CGATTTCTAGCGTATATGGAGGATCGCAGAAAACAGAAGTGGCAAAGATG 50

  51 TAAAAAAAATAATAAGGCAGAATTGAACTGTTTGGGAATGGAACCAGTAC 100

 101 AGACAGCTAACTCTAGAAATGGGAAAAAGGGTCATCACACTGAAACGGTG 150

 151 TTCAACCGGGTTTTGCCAGGGCCTATTGCACCAGAGAGCAGCAAGAAGCG 200

 201 GCCCGTAGATGCGACCAGACCTTTCTAAGATGATGGCCCTCATGCAGGTG 250

 251 GAAGCATCGGT 261
```

Figure 21

Clone S3+14 3' DNA sequence (SEQ ID No. 21)

```
  1 AGAGGCCCTCATGCAGGGTGGAAGCACTGGGTCTCTATCTCTGCATAACA 50
 51 CGTTCCAACACAGCAGTAGTGGCCTACAGTCTGTGTCATCTTTGGGTCAC 100
101 AGCAGTGCCACTTCTGCATCTTTGCCTTTTATGCCATTTGTGATGGGTGG 150
151 TGCACCATCATCCCCTCATGTAGACTCCAGCACCATGCTTCATCACCACC 200
201 ACCACCACCCCCACCCCCACCATCACCACCATCACCATCCAGGCTTGAGA 250
251 GCCCCTGGCTACCCCTCTTCACCAGTGACTACCGCCTCTGGTACTACCTT 300
301 GCGGTTGCCACCACTGCAACCTGAGGAGGATGACGATGAGGATGAAGAAG 350
351 ATGATGATGACTTATCTCAGGGCTATGATAGCTCAGAAAGGGACTTCTCA 400
401 CTCATTGATGATCCTATGATGCCAGCTAACTCAGACTCCAGTGAAGATGC 450
451 TGATGACTGAAGCCCCAGCATGGGCCCCATTGCTTGGGCGGCTGCTGTAT 500
501 TTTCATTTACTCTGGCCCTTGGACTATGGAAACGTGGGAGGGGCAGG 547
```

Figure 22

Clone S3+14 protein sequence (SEQ ID No. 22)

1 EALMQGGSTGSLSLHNTFQHSSSGLQSVSSLGHSSATSASLPFMPFVMGG 50

51 APSSPHVDSSTMLHHHHHHPHPHHHHHHHPGLRAPGYPSSPVTTASGTTL 100

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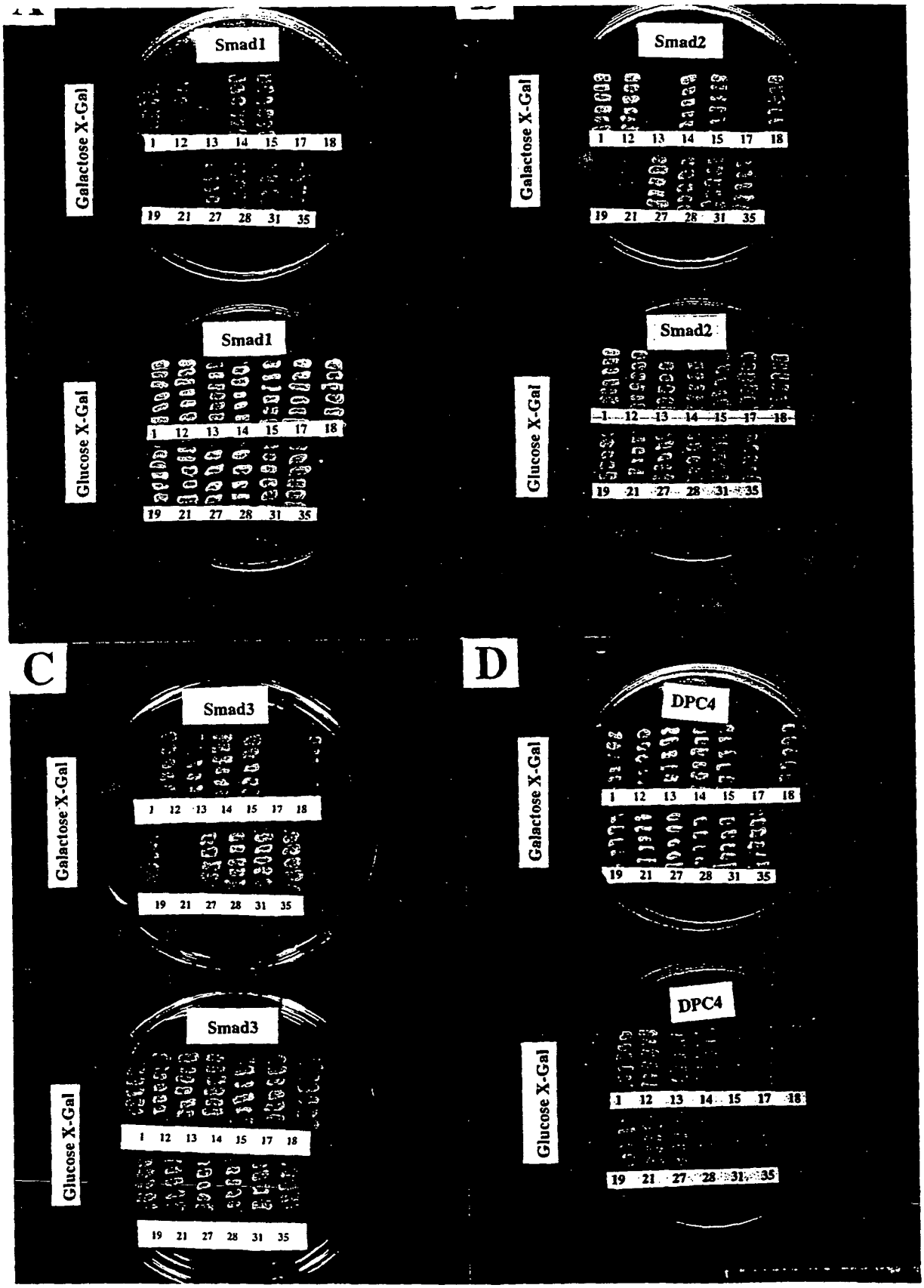
151 DD 152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1 12 13 14 15 17 18
19 21 27 28 31 35
Smad2
Galactose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
Smad1
Glucose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
Smad2
Glucose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
C
Smad3
Galactose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
Smad3
Glucose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
D
DPC4
Galactose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35
DPC4
Glucose X-Gal
1 12 13 14 15 17 18
19 21 27 28 31 35

FIGURE 23

FIGURE 24

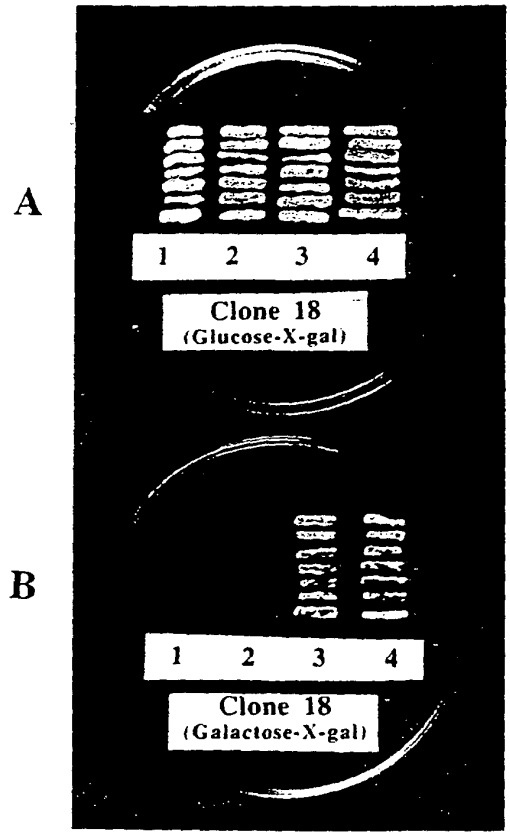
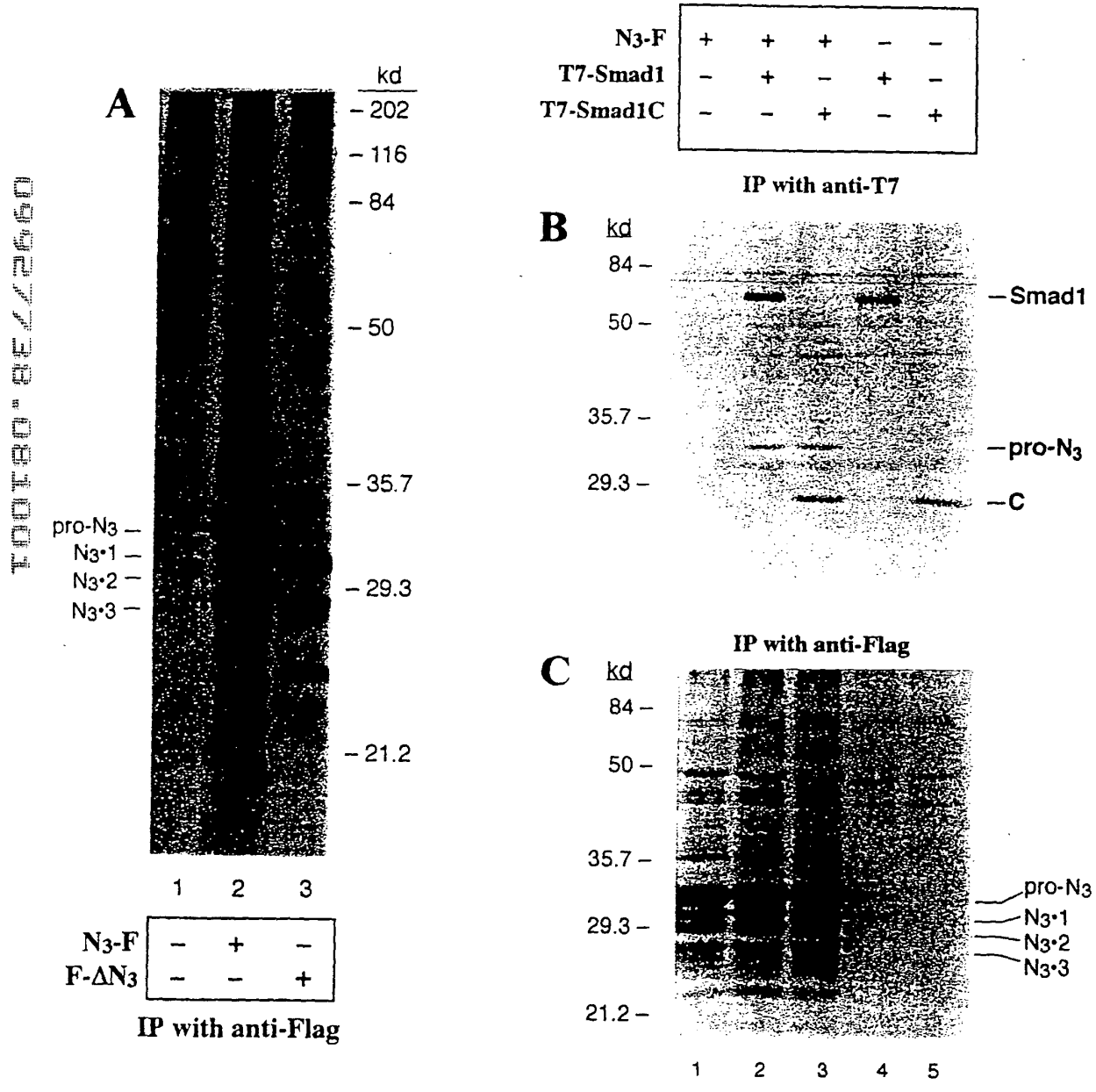

A
1 2 3 4
Clone 18
(Glucose-X-gal)
B
1 2 3 4
Clone 18
(Galactose-X-gal)
C
Smad1
G419S
NL
L
1 2 3 4

FIGURE 25


A
kd
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– 116
– 84
– 50
– 35.7
– 29.3
– 21.2
pro-N3 –
N3•1 –
N3•2 –
N3•3 –
1 2 3
N3-F – + –
F-ΔN3 – – +
IP with anti-Flag
N3-F + + + – –
T7-Smad1 – + – + –
T7-Smad1C – – + – +
IP with anti-T7
B
kd
84 –
50 –
35.7 –
29.3 –
–Smad1
–pro-N3
–C
IP with anti-Flag
C
kd
84 –
50 –
35.7 –
29.3 –
21.2 –
pro-N3
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N3•2
N3•3
1 2 3 4 5

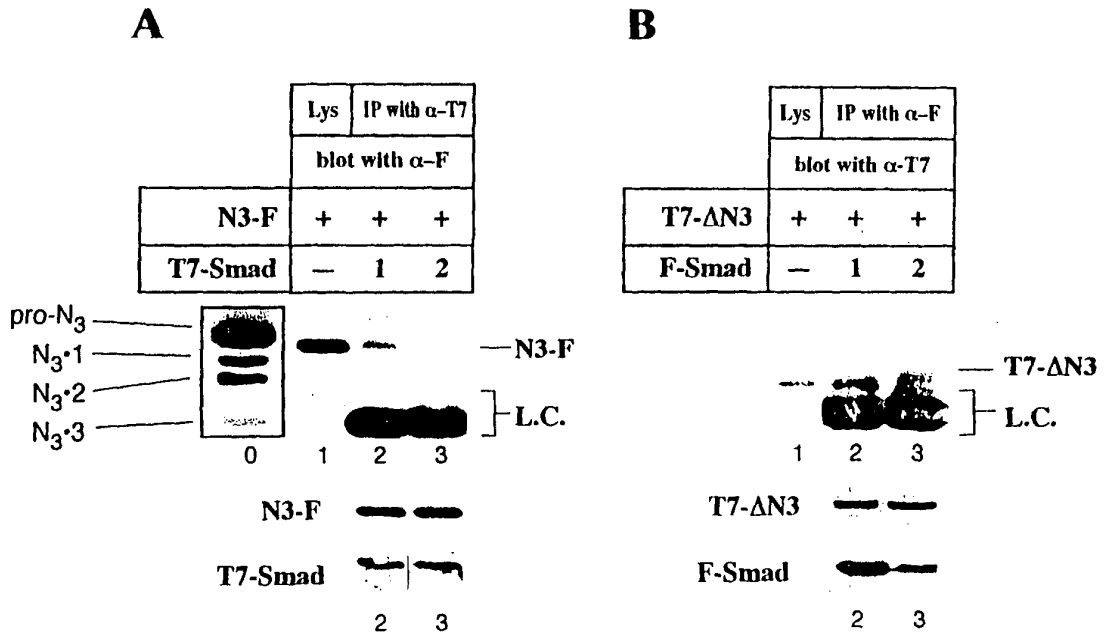
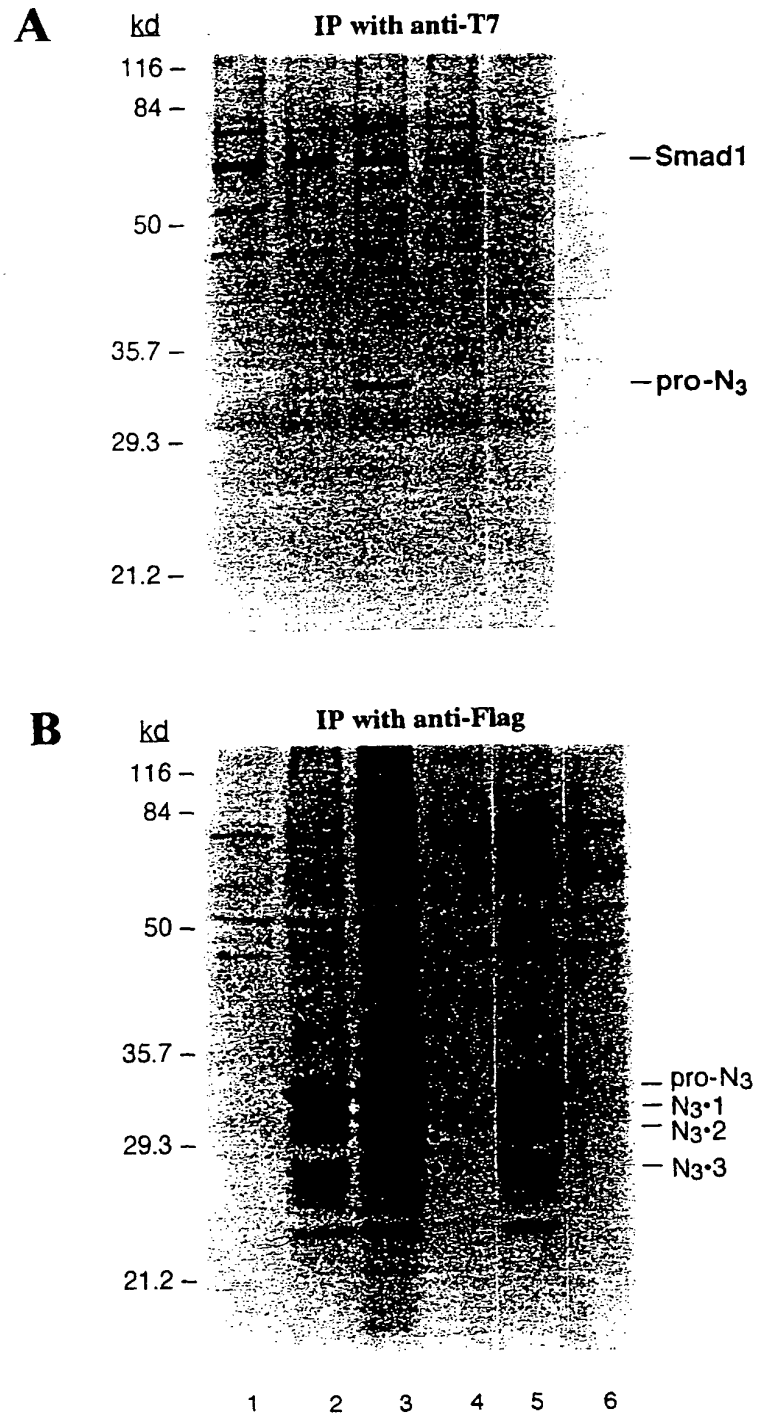
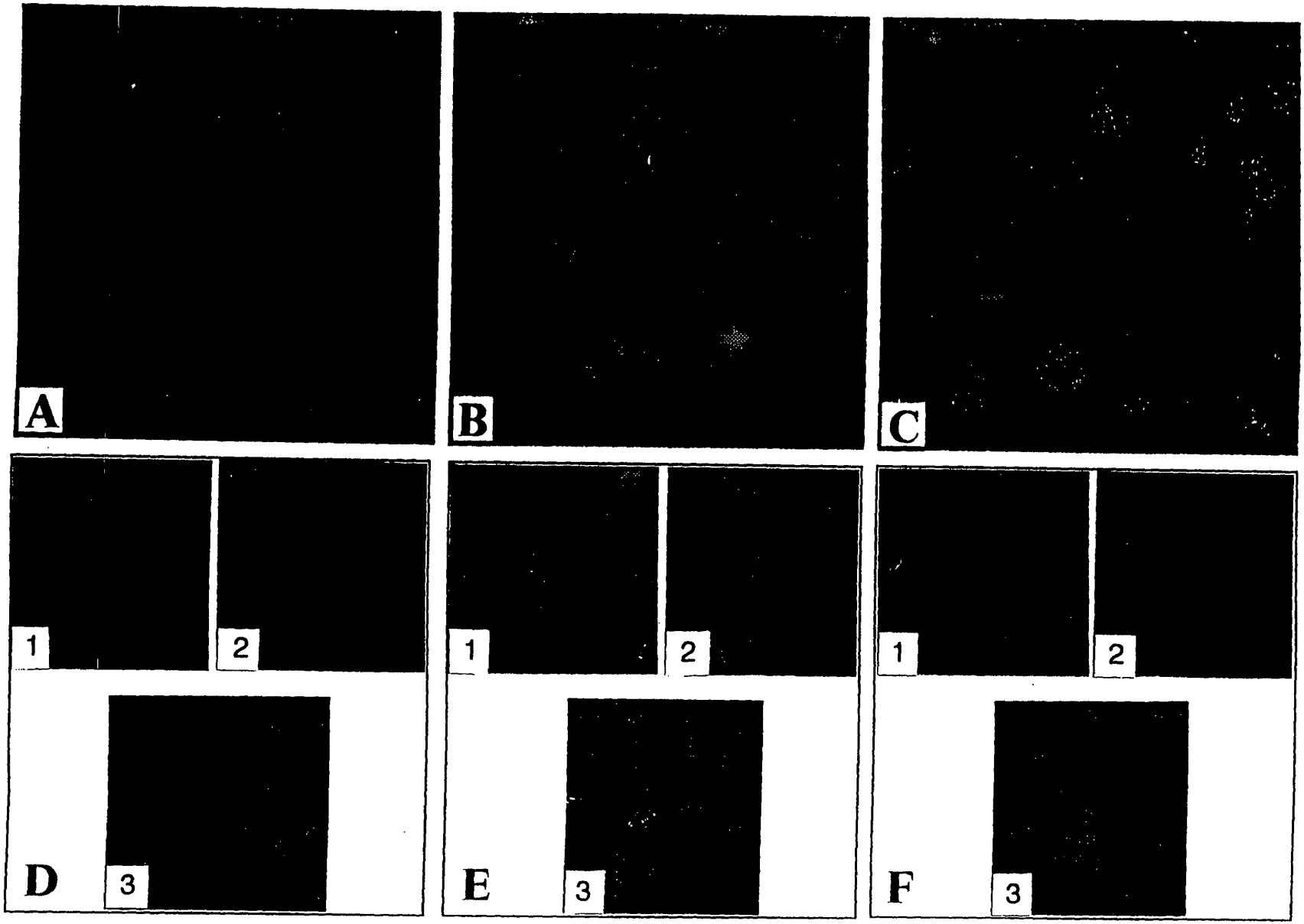

A
Lys
IP with α-T7
blot with α-F
N3-F + + +
T7-Smad — 1 2
pro-N3
N3·1
N3·2
N3·3
N3-F
L.C.
0 1 2 3
N3-F
T7-Smad
2 3
B
Lys
IP with α-F
blot with α-T7
T7-ΔN3 + + +
F-Smad — 1 2
T7-ΔN3
L.C.
1 2 3
T7-ΔN3
F-Smad
2 3

FIGURE 26

FIGURE 27

N_3-F	–	+	+	–	+	–
T7-Smad1	+	+	+	+	–	–
HA-ALK3QD	–	–	+	+	+	+

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B
C
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2
D
3
1
2
E
3
1
2
F
3

FIGURE 29

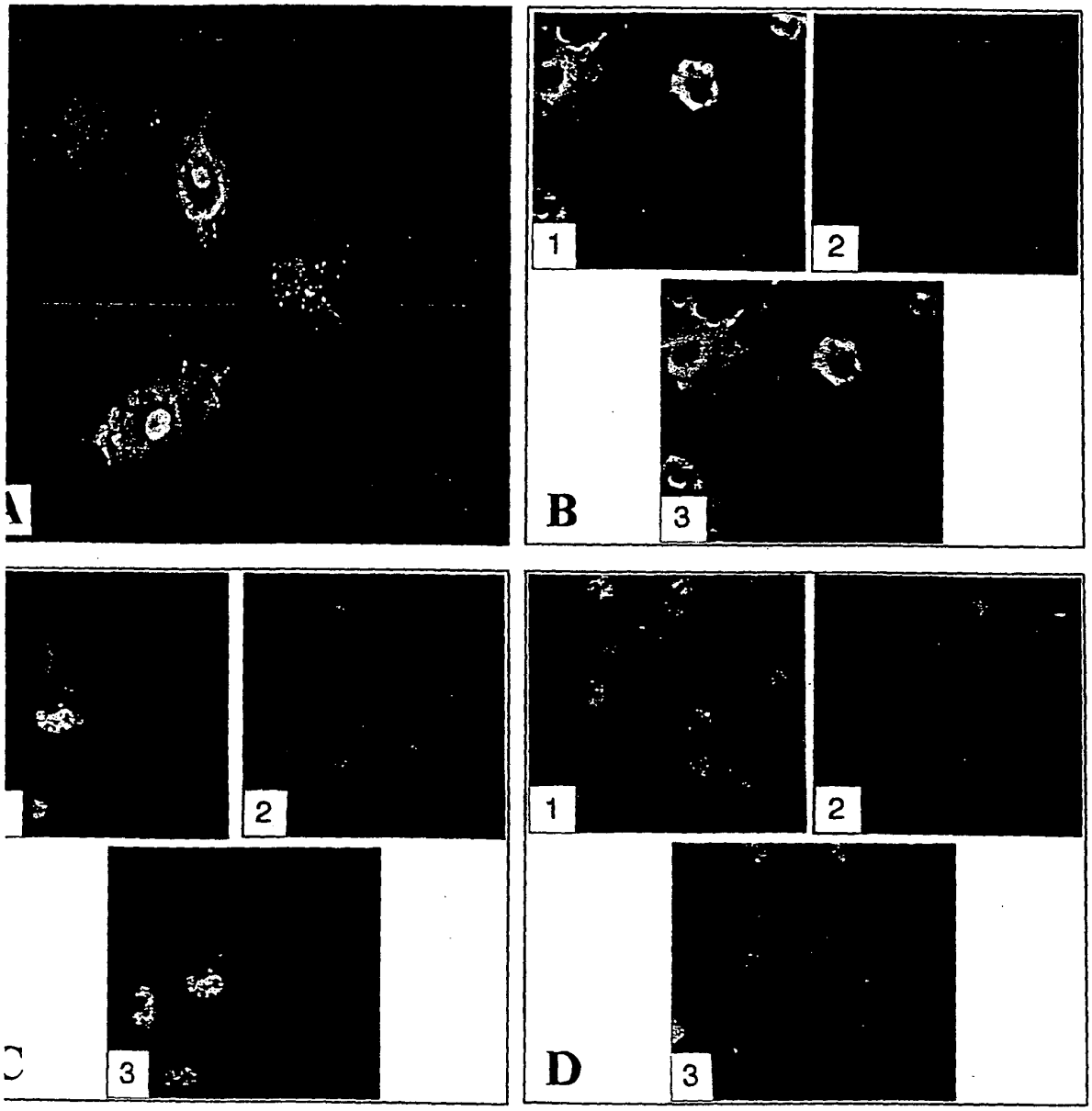
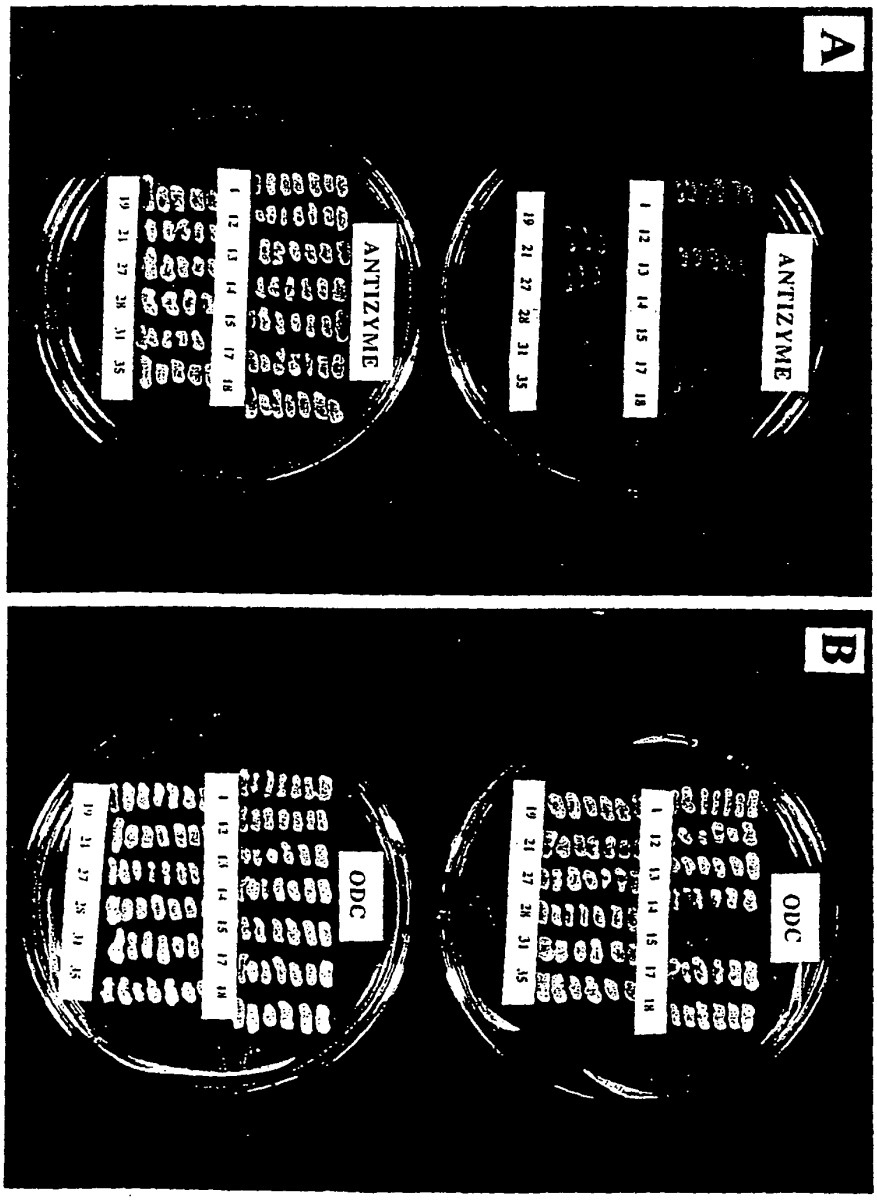
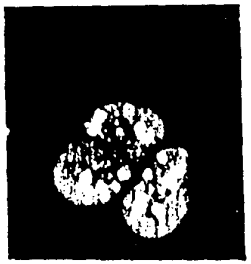
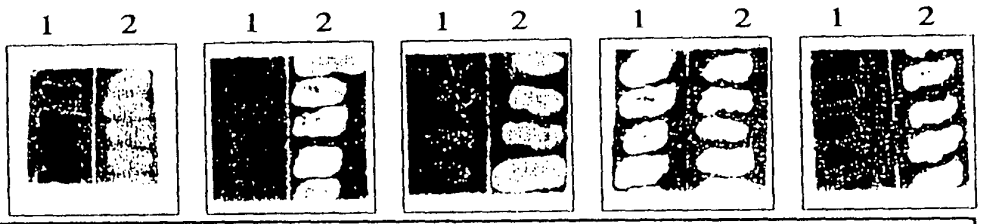


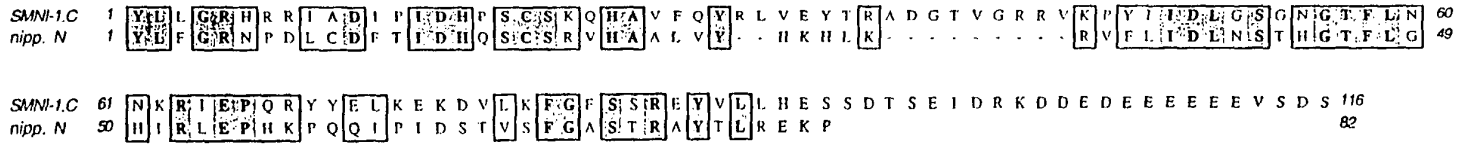
FIGURE 30

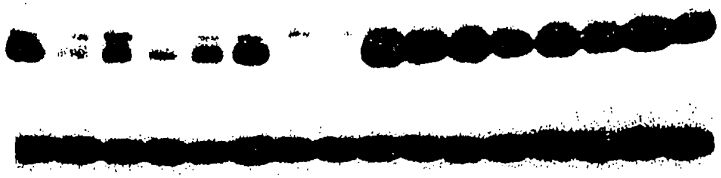






LexA	Smad1	ATZ	HSN3	ODC	ODC
B42	SMNI-1	SMNI-1	SMNI-1	SMNI-1	ATZ

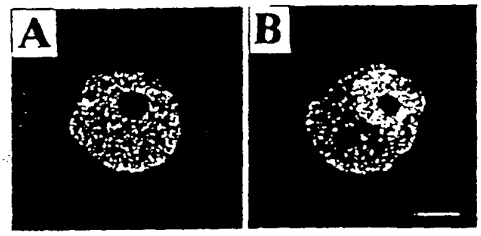


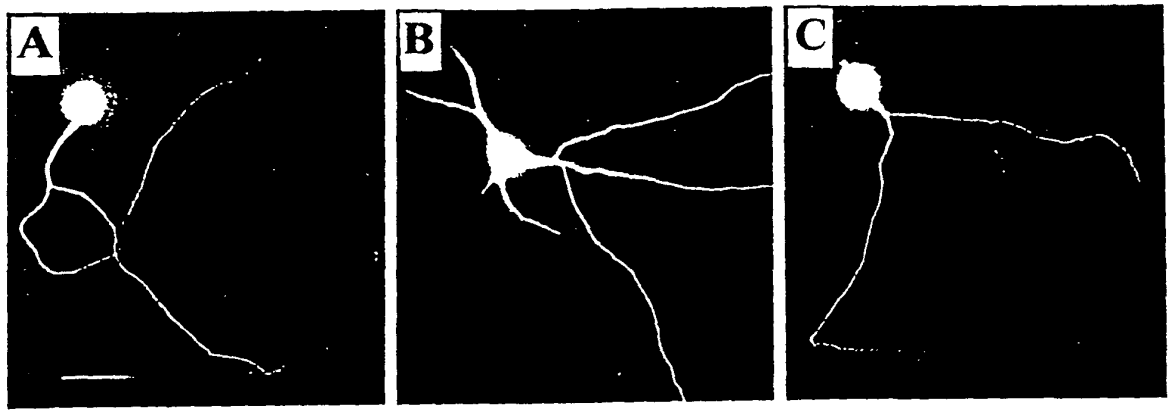


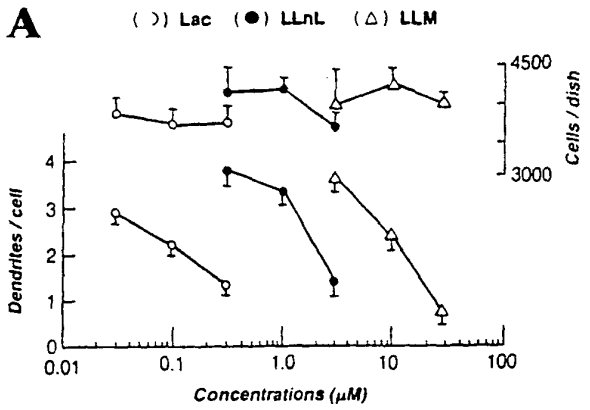
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ALK3	W	A	A	A	A	A	W	A	W	A	W	A	W	A	W	A
SMNI-1	+	+	+	+	+	+	–	–	+	+	+	+	+	+	+	+
SMAD1	+	+	+	+	+	+	+	+	+	+	+	+	–	–	G-S	G-S
SMAD4	+	+	+	+	+	+	+	+	+	+	–	–	+	+	+	+
ATZ	+	+	+	+	+	+	+	+	–	–	+	+	+	+	+	+
Drugs			Lac	ZLLF	LLnL	LLM										

FIGURE 31

FIGURE 32


A
B


A
B
C


A
(○) Lac (●) LLnL (△) LLM
4500
3000
Cells / dish
Dendrites / cell
0
1
2
3
4
0.01
0.1
1.0
10
100
Concentrations (μM)

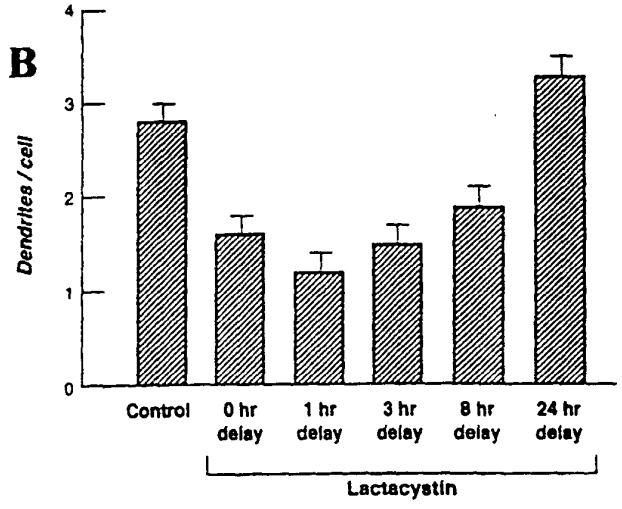

B
Dendrites / cell
0
1
2
3
4
Control
0 hr delay
1 hr delay
3 hr delay
8 hr delay
24 hr delay
Lactacystin

Figure 33

Clone S1+19 cDNA sequence (SEQ ID No. 23)

1 GAGGAGCTCAACTGATCTGTTTTCTTTCGCCCAGCCAAAATCACAGAATG 50
51 AAGGCGGTGAAGAGCGAACGGGAGCGAGGGAGCCGGCGAAGACACCGGGA 100
101 CGGGGACGTGGTGCTGCCGGCGGGGGTGGTGGTGAAGCAGGAGCGTCTCA 150
151 GCCCAGAAGTCGCACCTCCCGCCCACCGCCGTCCGGACCACTCCGGTGGT 200
201 AGCCCGTCTCCGCCGACCAGCGAGCCGGCCCGCTCGGGCCACCGCGGGAA 250
251 CCGAGCCCGAGGAGTTAGCCGGTCCCCACCCAAAAAGAAAAACAAGGCCT 300
301 CAGGGAGAAGAAGCAAGTCTCCTCGCAGTAAGAGAAACCGAAGTCCTCAC 350
351 CACTCAACAGTCAAAGTGAAGCAGGAGCGTGAGGATCATCCCCGGAGAGG 400
401 ACGGGAGGATCGGCAGCACAGGGAACCATCAGAACAGGAACACAGGAGAG 450
451 CTAGGAACAGTGACCGGGACAGACACCGGGGCCATTCCCACCAAAGGAGA 500
501 ACGTCTAACGAGAGGCCTGGGAGTGGGCAGGGTCAGGGACGGGATCGAGA 550
551 CACTCAGAACCTGCAGGCTCAGGAAGAAGAGCGGGAGTTTTATAATGCCA 600
601 GGCGACGGGAGCATCGCCAGAGGAATGACGTTGGTGGTGGCGGCAGTGAG 650
651 TCTCAGGAGTTGGTTCCTCGGCCTGGTGGCAACAACAAAGAAAAAGAGGT 700
701 GCCCGCTAAAGAAAAACCAAGCTTTGAACTTTCTGGGGCACTTCTTGAGG 750
751 ACACCAACACTTTCCGGGGTGTAGTCATTAAATATAGTGAGCCCCCAGAA 800
801 GCACGTATCCCCAAAAAACGGTGGCGTCTCTACCCATTTAAAAATGATGA 850
851 GGTGCTTCCAGTCATGTACATACATCGACAGAGTGCGTACCTACTGGGTC 900
901 GACACCGCCGCATTGCAGACATTCCAATTGATCACCCGTCTTGTTCAAAG 950
951 CAGCATGCGGTCTTTCAATATCGGCTTGTGGAATATACCCGTGCTGATGG 1000

1001 CACAGTTGGCCGAAGAGTGAAGCCCTACATCATTGACCTTGGCTCAGGCA 1050

1051 ATGGAACCTTCTTAAACAACAAACGTATTGAGCCACAGAGATACTATGAA 1100

1101 CTAAAAGAAAAGGATGTACTCAAATTTGGATTCAGTAGCAGAGAATACGT 1150

1151 CTTGCTCCATGAGTCGTCGGACACTTCTGAAATAGACAGGAAAGATGACG 1200

1201 AGGATGAGGAGGAGGAGGAAGAAGTGTCTGACAGCTAGCAAACTAAGAAC 1250

1251 CCAAACTATTGATACACGGTTTCCTTCTTGGAAGTCTTTGATTGACTCAG 1300

1301 AGAGCACTATGGTGGTGGGTCCAGCACTATGGTGCTCTCTGTAATGCCTC 1350

1351 TTACTGCCTTAAGTCTTTCCTCTGTTGCTGACCAGATTGTGTTACCATTT 1400

1401 GAATACACTGACTAATGTTTGTTAAACTTTTTCTGTGGCACCTTGGCCAC 1450

1451 ATGCCTGCAGGCATTTGTTTTCAGAACAGTCTCACCAATTACAACACACC 1500

1501 GTGTTTTAGTAGAAGTGTTGTGGTTTTAGTTGGTGCTTTCAGAACTGCTG 1550

1551 CCTAGGAAACTATAAACCCTTGGTTAAGGGGAAATCATGGCTTGTTCTCT 1600

1601 TTGTACAGTTACTTTATTTATATAGGTGTTAAGCTTTGTGGACCAGGTGT 1650

1651 TTTTCTTTTGGGGCGAACCCCTGAGCAGAGAATCTTACTAGGCTTTGGTT 1700

1701 ATCACCAAAACAACCTCCAGTATATACCAAAGCTTTGACTTGTTTGAGCT 1750

1751 CTTGAGCTTAGAAGTTGATTTTGCACTTATTTTTTTGGGGGGTGGGAATG 1800

1801 TACTGCAGTCAGTAAACATTATTGACTGTTTAACTTAAACAGATGCTTTA 1850

1851 TGGCACCTGCTCAAGCCCGTGACTGTACAGAAGGATCCTGGTTGCTACCA 1900

1901 GTGGGTGCTGATTCAGCATCACAAGTGACTGAAATTGGCTGTGGATCTGT 1950

1951 TCTTTGTGAAAGAATTCCTGATTTCTCCATGGAGCATGTACACAACAATT 2000

2001 TTGATCATATTAACTGTACTTCAGTTTTGCATTTTTATTCAAATGTTATC 2050

2051 TCTTTTTTTCTTTGAGAAATAAACTGTCACTGATGTGACAGCGTTCTTTC 2100

2101 TTTATTCTAATAACATGTATAGATCTAAAGCAGGTTGTGTTGTTTACATG 2150

2151 TTTCTACACATTTCATCCTTTAAAAAGTTGTTGAGAGAGGTTGTATTTAC 2200

2201 CTTCCCAAGGTTGGAAAGCAGGGGAATTTCCCAGTGTCCTAGTTTTCCAC 2250

2251 CAGAGGAATATGTGTAAGTAGCAAAGTATTTGCTGCTTACATATAGTGTG 2300

2301 TATGTATGTATATATGTAAATTGTGTGTTAAAGAGCTGATACTGATTTTC 2350

2351 ATATGACAATGTTAGGCAAAGGCCTCCCTGCATTTGAAGAGCAGGTTTTC 2400

2401 ATTTATATGTATTTTTGGATAAAAAAATAAAATTTGTAAATATAGCCCC 2450

2451 CAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 2496

Figure 34

Clone S1+12-2 cDNA sequence (SEQ ID No. 24)

1 CCCACGCGTCCGGCCTCGGAGCAGCCATGATGGAAGGCCTGGACGACGGC 50

51 CCGGACTTCCTCTCAGAAGAGGACCGCGGACTTAAAGCAATAAATGTAGA 100

101 TCTTCAAAGTGATGCTGCTCTGCAGGTGGACATTTCTGATGCTCTTAGTG 150

151 AGCGGGATAAAGTAAAATTCACTGTTCACACAAAGAGTTCATTGCCAAAT 200

201 TTTAAACAAAACGAGTTTTCAGTTGTTCGGCAACATGAGGAATTTATCTG 250

251 GCTTCATGATTCCTTTGTTGAAAATGAAGACTATGCAGGTTATATCATTC 300

301 CACCAGCACCACCAAGACCTGATTTTGATGCTTCAAGGGAAAAACTACAG 350

351 AAGCTTGGTGAAGGAGAAGGGTCAATGACGAAGGAAGAATTCACAAAGAT 400

401 GAAACAGGAACTGGAAGCTGAATATTTGGCAATATTCAAGAAGACAGTTG 450

451 CGATGCATGAAGTGTTCCTGTGTCGTGTGGCAGCACATCCTATTTTGAGA 500

501 AGAGATTTAAATTTCCATGTCTTCTTGGAATATAATCAAGATTTGAGTGT 550

551 GCGAGGAAAAAATAAAAAAGAGAAACTTGAAGACTTCTTTAAAAACATGG 600

601 TTAAATCAGCAGATGGAGTAATCGTTTCAGGAGTAAAGGATGTAGATGAT 650

651 TTCTTTGAGCACGAACGAACATTTCTTTTGGAGTATCATAACCGAGTTAA 700

701 GGATGCATCTGCTAAATCTGATAGAATGACAAGATCCCACAAAAGTGCTG 750

751 CAGATGATTACAATAGAATTGGTTCTTCATTATATGCTTTAGGAACTCAG 800

801 GATTCTACAGATATATGCAAGTTTTTTCTCAAAGTTTCAGAACTGTTCGA 850

851 TAAAACAAGAAAAATAGAAGCACGAGTGTCTGCTGATGAAGACCTCAAAC 900

901 TTTCTGATCTTTTAAAATATTACTTAAGAGAATCTCAAGCTGCTAAGGAT 950

951 CTCCTGTATCGAAGGTCTAGGTCACTAGTGGATTATGAAAATGCTAATAA 1000

1001 AGCACTGGATAAAGCAAGAGCAAAAAATAAAGATGTTCTACAGGCCGAAA 1050

1051 CTTCCCAACAATTATGTTGTCAGAAATTTGAAAAAATATCTGAGTCTGCA 1100

1101 AAACAAGAACTTATAGATTTTAAGACAAGAAGAGTTGCTGCATTCAGAAA 1150

1151 AAATTTAGTGGAACTGGCAGAGTTAGAACTGAAGCATGCAAAGGGTAATC 1200

1201 TACAGTTGCTGCAGAACTGCCTGGCAGTGTTAAATGGAGACACATAAGCC 1250

1251 ACACTCCGCCTTCCTGTTAAAAAGGGCTGCCTTCCTTCAAATTTTATTTT 1300

1301 TGTTTTCTTAATGATGTTAAGCATTTATGCTCACTGGAAACAAACAAAAA 1350

1351 GCAGCTGAAAAAGTGCATCAACTCCTCTTTTTCTGAGAAACATGGAGCAG 1400

1401 CGCACGCCCAGGCGATGCCAGTCTGTGTGCCGTGATGCCGCACTGTGTTC 1450

1451 CCCATGACAGTGGTCCATCATCGTGCACTCGTCATACTCAGAAGTCCAAA 1500

1501 GTTCATTCTTCTTTAAAGTAGCCTCTATAACTCTGTTTATTTTATAAATA 1550

1551 GTATTCCTTATGGCTGCCACTCTTATTTACCTTTAAATAATTTCTGAAAT 1600

1601 TTAACCTTTTCAGAATGCATTGTTGAAACAAGATAAAGATTGCCTTTTTT 1650

1651 GAATTTTTTAAATTTTGTTTTTAAAAGCATATACCACCTTAGTTCATTCA 1700

1701 TGTATCCTGGTAAAGCATCTTAATCAGACTTATTTTTAATTACTGAATAT 1750

1751 TTCTTAGACGTTTTGGGACAGATTTTATGTAATCTTTATAAGTATGATTT 1800

1801 CTGAAGAAAAGCAAATGCATTAGTATGTTTGCCTTAAACTTGTAGACTAA 1850

1851 ACCAAGTATTGTAAAATAAACAGCGATAACAGTGATAGTTTTTAACTCTA 1900

1901 TGGTCATTGTATCACTCTGGAAAATGTGGAGTAGCTGTAATAAATCTACT 1950

1951 CCTGTATTATGCTTT 1965

Figure 35

Clone S1+12-5 cDNA sequence (SEQ ID No. 25)

1 GCGGCGCCGAGTCCCGGGAGCGCGGTGGGGGCAGCGGGCGCGGGGCGGGC 50

51 GCGGGGACCGCGCCAGCCTGTCACTAATGTCTCCCTTTGTGTCTCCCCCA 100

101 TCTCATCCTTTTCCCCGGCGCGCCGTGCCCGCCGACCCCACAGGAAGGCC 150

151 TGGACGACGGCCCGGACTTCCTCTCAGAAGAGGACCGCGGACTTAAAGCA 200

201 ATAAATGTAGATCTTCAAAGTGATGCTGCTCTGCAGGTGGACATTTCTGA 250

251 TGCTCTTAGTGAGCGGGATAAAGTAAAATTCACTGTTCACACAAAGAGTT 300

301 CATTGCCAAATTTTAAACAAAACGAGTTTTCAGTTGTTCGGCAACATGAG 350

351 GAATTTATCTGGCTTCATGATTCCTTTGTTGAAAATGAAGACTATGCAGG 400

401 TTATATCATTCCACCAGCACCACCAAGACCTGATTTTGATGCTTCAAGGG 450

451 AAAAACTACAGAAGCTTGGTGAAGGAGAAGGGTCAATGACGAAGGAAGAA 500

501 TTCACAAAGATGAAACAGGAACTGGAAGCGGGTTGGATAACAGAGAACCT 550

551 TGGGTTTATTCTACTGCTACCTCCATCCTCTGCATCCTTCTTTTTTGTCT 600

601 TCACTGAATGACTACCCTCACAGAGATCAAACTTCTCCCATCATTGGTCC 650

651 TGCTGGTTTGCTGTGAATATTTGGCAATATTCAAGAAGACAGTTGCGATG 700

701 CATGAAGTGTTCCTGTGTCGTGTGGCAGCACATCCTATTTTGAGAAGAGA 750

751 TTTAAATTTCCATGTCTTCTTGGAATATAATCAAGATTTGAGTGTGCGAG 800

801 GAAAAAATAAAAAAGAGAAACTTGAAGACTTCTTTAAAAACATGGTTAAA 850

851 TCAGCAGATGGAGTAATCGTTTCAGGAGTAAAGGATGTAGATGATTTCTT 900

901 TGAGCACGAACGAACATTTCTTTTGGAGTATCATAACCGAGTTAAGGATG 950

951 CATCTGCTAAATCTGATAGAATGACAAGATCCCACAAAAGTGCTGCAGAT 1000

1001 GATTACAATAGAATTGGTTCTTCATTATATGCTTTAGGAACTCAGGATTC 1050

1051 TACAGATATATGCAAGTTTTTCTCAAAGTTTCAGAACTGTTCGATAAAA 1100

1151 CAAGAAAAATAGAAGCACGAGTGTCTGCTGATGAAGACCTCAAACTTTCT 1150

1201 GATCTTTTAAAATATTACTTAAGAGAATCTCAAGCTGCTAAGGATCTCCT 1200

1251 GTATCGAAGGTCTAGGTCACTAGTGGATTATGAAAATGCTAATAAAGCAC 1250

1301 TGGATAAAGCAAGAGCAAAAAAATAAAGATGTTCTACAGGCCGAAACTTCC 1300

1351 CAACAATTATGTTGTCAGAAATTTGAAAAAATATCTGAGTCTGCAAAACA 1350

1401 AGAACTTATAGATTTTAAGACAAGAAGAGTTGCTGCATTCAGAAAAAATT 1400

1451 TAGTGGAACTGGCAGAGTTAGAACTGAAGCATGCAAAGGGTAATCTACAG 1450

1501 TTGCTGCAGAACTGCCTGGCAGTGTTAAATGGAGACACATAAGCCACACT 1500

1551 CCGCCTTCCTGTTAAAAAGGGCTGCCTTCCTTCAAATTTTATTTTTGTTT 1550

1601 TCTTAATGATGTTAAGCATTTATGCTCACTGGAAACAAACAAAAAGCAGC 1600

1651 TGAAAAAGTGCATCAACTCCTCTTTTTCTGAGAAACATGGAGCAGCGCAC 1650

1701 GCCCAGGCGATGCCAGTCTGTGTGCCGTGATGCCGCACTGTGTTCCCCAT 1700

1751 GACAGTGGTCCATCATCGTGCACTCGTCATACTCAGAAGTCCAAAGTTCA 1750

1801 TTCTTCTTTAAAGTAGCCTCTATAACTCTGTTTATTTTATAAATAGTATT 1800

1851 CCTTATGGCTGCCACTCTTATTTACCTTTAAATAATTTCTGAAATTTAAC 1850

1901 CTTTTCAGAATGCATTGTTGAAACAAGATAAAGATTGCCTTTTTTGAATT 1900

1951 TTTTAAATTTTGTTTTTAAAAGCATATACCACCTTAGTTCATTCATGTAT 2000

2001 CCTGGTAAAGCATCTTAATCAGACTTATTTTTAATTACTGAATATTTCTT 2050

2151 AGACGTTTTGGGACAGATTTTATGTAATCTTTATAAGTATGATTTCTGAA 2100

3001 GAAAAGCAAATGCATTAGTATGTTTGCCTTAAACTTGTAGACTAAACCAA 2150

3151 GTATTGTAAAATAAACAGCGATAACAGTGATAGTTTTTAACTCTATGGTC 2200

3201 ATTGTATCACTCTGGAAAATGTGGAGTAGCTGTAATAAATCTAATCCTGT 2250

3251 ATTATGCTTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA 2300

3301 AAAAAAAAAAAAAAAAAAA 3319

Figure 36

clone S1+27 cDNA sequence (SEQ ID No. 26)

1 GTCGACCCACGCGTCCGGCGGGCCGTGGAGGGTCCCGAGGTGGGGGTCG 50

51 GGGCGGGATGGCTGCAGCGGCGGCCGGGGCCGGGAGCGGGCCCTGGGCGG 100

101 CCCAGGAGAAGCAGTTCCCGCCGGCGCTGCTGAGTTTCTTCATCTACAAC 150

151 CCGCGCTTCGGGCCGCGCGAAGGACAGGAGGAAAATAAGATTTTATTTTA 200

201 TCATCCAAATGAGGTAGAAAAGAATGAGAAGATTAGAAATGTCGGATTGT 250

251 GTGAAGCTATTGTACAGTTTACAAGGACATTTAGCCCATCAAAACCTGCA 300

301 AAATCTTTACATACACAGAAGAACAGACAGTTCTTCAATGAACCAGAAGA 350

351 AAATTTCTGGATGGTCATGGTTGTTCGGAATCCTATAATTGAAAAACAGA 400

401 GTAAAGATGGAAAACCAGTTATTGAATATCAAGAGGAGGAGTTGTTGGAC 450

451 AAGGTTTATAGCTCGGTGCTGCGGCAGTGCTACAGCATGTACAAGCTTTT 500

501 TAATGGTACATTTCTGAAAGCCATGGAAGACGGAGGCGTCAAGCTTCTGA 550

551 AAGAAAAATTAGAGAAATTCTTCCATCGGTATTTGCAAACGCTACATTTG 600

601 CAGTCATGTGACCTACTTGACATTTTTGGTGGAATCAGCTTCTTCCCGTT 650

651 GGATAAAATGACTTATTTGAAAATCCAGTCCTTTATTAATAAGAATGGAG 700

701 GAAAGCCTGAATATAGTCAAATACACTGCTTTTCTCTATAACGATCAGCT 750

751 CATCTGGAGTGGATTAGAACAAGATGACATGAGAATTTTATACAAATACC 800

801 TTACCACCTCCCTTTTCCCAAGGCACATCGAACCTGAGTTAGCAGGAAGG 850

851 GATTCTCCAATAAGAGCAGAAATGCCAGGAAATCTTCAACACTATGGAAG 900

901 ATTTCTTACCGGACCCTTGAACCTCAATGATCCAGATGCAAAATGCAGAT 950

951 TCCCCAAAATTTTTGTAAATACAGATGACACTTATGAAGAGCTCCATTTA 1000

1001 ATCGTTTATAAGGCCATGAGTGCGGCTGTGTGCTTTATGATCGACGCCTC 1050

1051 TGTCCACCCAACGTTGGATTTTTGCCGAAGACTGGACAGCATCGTTGGGC 1100

1101 CCCAGCTCACAGTGCTGGCCTCTGACATCTGTGAACAGTTTAACATCAAC 1150

1151 AAGAGGATGTCCGGGTCTGAGAAAGAACCCCAGTTTAAGTTTATCTACTT 1200

1201 CAACCACATGAATCTCGCCGAGAAGAGCACAGTTCACATGAGGAAAACGC 1250

1251 CCAGCGTGTCGCTCACTTCCGTGCACCCGGATTTAATGAAGATTCTCGGT 1300

1301 GACATCAACAGTGACTTTACCAGAGTGGATGAAGATGAGGAGATCATTGT 1350

1351 GAAGGCCATGAGTGATTACTGGGTTGTTGGAAAGAAGTCTGATCGGCGGG 1400

1401 AGCTCTATGTTATTTTGAATCAAAAAAATGCAAACCTGATTGAAGTAAAT 1450

1451 GAGGTCAAGAAACTTTGTGCAACGCAGTTCAACAACATCTTCTTCTTGGA 1500

1501 TTGACGGATGACGGCTCACTGAGAGCATATCTAAAAAACACTCTGCAAAC 1550

1551 ATTTGGTCACATGCAAGTTAGTGGTCATATGACGGACTGCATTCAGGACA 1600

1601 AGGGTAAAGCAATACTTGCTTTGAAGAATCACATTTCGACTCGGTCTGCT 1650

1651 GATCTGAGGTTTTTAGATTTTAAATATTTATGTGGAATTAATTAAAGGTA 1700

1701 GTTGGCTATATCGCTATCATTTCATTCTTTTGACATTATGTGAATATTTT 1750

1751 ACTGGAAAATAAGACTAATAAATTGTTAAAAGTTTTTAAAAAAAAAAAAA 1800

1801 AAAAAAAAAAAAAAAAAAAAAAAAAAGGGCGGCC 1834

Figure 37

clone S1+28 cDNA sequence (SEQ ID No. 27)

```
  1 GTTTGCAGTTGATGCTAAGGCCTTGCCTCAGAATAAGCCAAGGCCTCTCA 50
 51 CTCAAGAAGAAATTGCTCAGAGACGTGAGCGTGCAAGACAAAGGCATGCA 100
101 GAGAAGCTTGCAGCAGCACAGGGACAGGCACCCTTGGAGCCCACCCAAGA 150
151 TGGGAGTGCCATTGAAACATGTCCAAAAGGAGACGAGCCAAGAGGTGACG 200
201 AGCAACAGGTGGAAAGTATGACCCCTAAACCTGTGCTCCAGGAAGAAAAC 250
251 AACCAAGAGTCTTTTATTGCATTTGCTCGGGTGTTCAGTGGTGTGGCTCG 300
301 AAGAGGAAAGAAAATTTTTGTCTTGGGGCCCAAATACAGTCCTCTTGAGT 350
351 TTTTACGAAGGGTACCATTATGCTTCTCAGCTCCACCAGATGGCCTCCCC 400
401 CAAGTCCCCCACATGGCATACTGTGCTCTGGAAAACCTGTATCTTCTGAT 450
451 GGGAAGGGAACTGGAATATCTAGAGGAGGTACCTCCAGGAAATGTGCTAG 500
501 GAATAGGAGGCCTTCAAGATTTTGTGCTGAAATCTGCAACACTGTGTAGC 550
551 CTGCCATCCTGCCCACCATTTATACCACTCAACTTCGAAGCCACTCCTAT 600
601 TGTGAGAGTTGCTGTTGAACCAAAACATCCAAGTGAAATGCCTCAGCTCG 650
651 TAAAAGGAATGAAACTGTTAAACCAGGCTGATCCCTGTGTCCAGATTTTA 700
701 ATTCAGGAAACGGGAGAGCACGTTTTAGTCACAGCAGGAGAAGTCCACCT 750
751 TCAGCGATGCCTGGATGACTTAAAAGAAAGGTTTGCAAAGATTCATATCA 800
801 GTGTATCTGAACCTATTATTCCATTCAGAGAAACAATCACAAAACCCCCA 850
851 AAAGTTGACATGGTCAATGAAGAAATAGGCAAACAGCAAAAAGTTGCAGT 900
901 CATACACCAAATGAAAGAAGATCAAAGCAAAATCCCTGAAGGAATCCAAG 950
951 TTGACTCTGACGGGCTAATCACCATAACAACTCCCAATAAACTTGCCACG 1000
```

1001 CTCAGTGTTCGAGCCATGCCCCTTCCAGAAGAAGTCACCCAGATTCTGGA 1050

1051 AGAAAATAGTGATTTGATTCGTTCTATGGAGCAGTTGACATCCTCTTTGA 1100

1101 ATGAGGGTGAAAATACTCACATGATTCATCAGAAGACCCAAGAGAAAATT 1150

1151 TGGGAATTCAAAGGAAAACTGGAGCAACACCTAACAGGGAGAAGATGGAG 1200

1201 GAACATTGTTGACCAAATCTGGTCATTTGGCCCAAGAAAATGTGGCCCA 1250

1251 ACATACTAGTCAATAAAAGTGAAGATTTTCAGAACTCAGTATGGACAGGT 1300

1301 CCAGCTGACAAAGCTTCAAAAGAAGCCAGTAGATACCGAGATTTGGGCAA 1350

1351 TAGCATTGTGAGTGGCTTCCAACTAGCAACCCTCTCTGGCCCCATGTGTG 1400

1401 AGGAGCCTCTCATGGGTGTCTGTTTTGTTCTGGAAAAATGGGACCTAAGT 1450

1451 AAATTTGAGGAACAAGGAGCAAGTGATCTGGCAAAAGAGGACAGGAGGAA 1500

1501 AATGAAACCTGTTCTGGTGGAAATGAAAACCAAGAGCTACAAGATGGCTG 1550

1551 CTCTGAGGCCTTTGAGAAGAGGACATCACAGAAAGGAGAATCTCCACTCA 1600

1601 CTGACTGCTATGGACCTTTCTCAGGACAGCTAATTGCCACCATGAAAGAA 1650

1651 GCATGTCGCTATGCACTGCAAGTGAAACCTCAGCGCCTGATGGCAGCTAT 1700

1701 GTACACATGTGACATCATGGCCACTGGTGATGTTCTCGGTCGAGTCTATG 1750

1751 CTGTCTTGTCAAAGAGAGAAGGTCGGGTACTTCAAGAAGAAATGAAAGAA 1800

1801 GGGACAGACATGTTCATCATCAAGGCTGTGCTGCCTGTTGCTGAAAGCTT 1850

1851 TGGTTTTGCTGATGAAATCAGGAAGAGGACAAGTGGCCTGGCCAGCCCAC 1900

1901 AACTAGTATTCAGCCATTGGGAGATCATTCCCAGTGACCCTTCTGGGTGC 1950

1951 CAACTACTGAGGAGGAATACTTGCACTTTGGGGAGAAGGCTGACTCTGAG 2000

2001 AACCAAGCCCGGAAGTACATGAACGCAGTACGAAAGCGGAAGGGGCTTTA 2050

2051 TGTGGAAGAAAAGATTGTGGAGCATGCAGAAAAGCAGAGGACACTCAGCA 2100

2101 AAAATAAGTAGCTACCTACTACTGGTGGATTCTTTTCCTTATAGTGAATT 2150

2201 TAAAAGTATCATCAAGGGTTTAATATTGGGAAAATTTCTTTTTGCCACAT 2250

2251 TATCTCTGTTTATTCACTTTCAATAAAGTTGATCCATATAAATATTTTAA 2300

2301 AGAGGATGTTAAAAAAAAAAAAAAAAA 2327